PAN-PACIFIC ENTOMOLOGIST
75(1): 52–54, (1999)

Scientific Note

CHILACIS TYPHAE (PERRIN) AND *HOLCOCRANUM SATUREJAE* (KOLENATI) (HEMIPTERA: LYGAEOIDEA: ARTHENEIDAE): FIRST WESTERN NORTH AMERICAN RECORDS OF TWO PALEARCTIC CATTAIL BUGS

Until the mid- to late 1980s, no members of the lygaeid subfamily Artheneinae were recorded from the New World. The subfamily's presence in the Western Hemisphere was recognized with the transfer of an indigenous neotropical species, *Polychisme ferruginosus* (Stål), from Ischnorhynchinae to Artheneinae (Slater, J. A. & H. Brailovsky. 1986. J. N. Y. Entomol. Soc., 94: 409–415), but this species has now been returned to the Ischnorhynchinae (Kerzhner, I. M. 1997. Zoosyst. Ross., 6: 213–222). Two Palearctic cattail-associated artheneines—*Chilacis typhae* (Perrin) and *Holcocranum saturejae* (Kolenati)—have since been detected in eastern North America (Wheeler, A. G. & J. E. Fetter. 1987. Proc. Entomol. Soc. Wash., 89: 244–249; Hoffman, R. L. & J. A. Slater. 1995. Banisteria, 5: 12–15). In addition, with reassessment of pentatomomorphan phylogeny, the Artheneinae have been proposed as a separate lygaeoid family, the Artheneidae (Henry, T. J. 1997. Ann. Entomol. Soc. Am., 90: 275–301).

Chilacis typhae, belonging to a monotypic genus, was first reported in North America from Delaware, Maryland, New York, and Pennsylvania (Wheeler & Fetter 1987). It has since been found in Tennessee and Virginia (Hoffman, R. L. 1996. The insects of Virginia No. 14: seed bugs of Virginia (Heteroptera: Lygaeidae). Virginia Museum of Natural History, Martinsville, Virginia). This seed-feeding bug develops on and in pistillate heads ("spikes") of cattails (*Typha* spp.; Typhaceae), typically those that have been tunneled by larvae of the Holarctic cosmopterygid *Limnaecia phragmitella* Stainton (Wheeler & Fetter 1987). In Europe, it sometimes can be found in cattail heads uninfested by this microlepidopteran (Stehlík, J. L. & I. Vavřínová. 1996. Acta Mus. Moraviae Sci. Nat., 80: 163–233). This bug is restricted to feeding on *Typha* spp. throughout its native West Palearctic range (Hoffman & Slater 1995; Stehlík & Vavřínová 1996). Populations of this apparently bivoltine species are most abundant in cattail heads from May to October (Stehlík & Vavřínová 1996).

The first North American records of *H. saturejae* were from Florida, New Jersey, North Carolina, South Carolina, and Virginia (Hoffman & Slater 1995). Hoffman (1996) noted that Wheeler & Fetter's (1987) records of *C. typhae* from New Castle Co., Delaware, and from Chester Co., Pennsylvania, were based in part on material of *H. saturejae,* thus adding those states to its known North American distribution. *Holcocranum saturejae* has been found mainly at low elevations from southeastern Pennsylvania to northern Florida, with populations also recorded west of the Blue Ridge Mountains of Virginia up to approximately 760 m above sea level (Hoffman 1996). Although all eastern U.S. collections have been made from cattail heads, this species sometimes develops in willow (*Salix* spp.; Salicaceae) catkins in Europe (Hoffman & Slater 1995). Adults overwinter in cattail heads, and in some parts of Europe, adults are found on *Typha*

spp. only from October to January. Some Old World populations, however, use cattail seeds for nymphal development (Stehlík & Vavřínová 1996).

On the basis of recent collecting, we add to the western North American fauna both European cattail bugs, whose North American distributions have been assumed to be strictly eastern: *C. typhae* from Oregon and Washington and *H. saturejae* from California to Texas. Voucher specimens are deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C.

Chilacis typhae becomes the fifth lygaeoid species considered adventive in the Pacific Northwest; distributions of the four previously recorded adventive lygaeoids in that region, all litter-inhabiting species, were reviewed by A. Asquith & J. D. Lattin (1991. Pan-Pac. Entomol. 67: 258–271). Western populations of *H. saturejae,* whose Old World distribution is more southern than that of *C. typhae* (Hoffman & Slater 1995), have been found as far north as Colusa County in north-central California. Both artheneids are among several Palearctic heteropterans that likely represent separate accidental introductions to eastern and western North America (Wheeler, A. G. & T. J. Henry. 1992. A synthesis of the Holarctic Miridae (Heteroptera). Entomological Society of America, Lanham, Maryland). The possibility exists that at least *H. saturejae* might represent a long-distance (aeolian) migrant (Hoffman & Slater 1995).

Typha latifolia is a naturally Holarctic plant, but *T. angustifolia,* though often considered Holarctic, might not be a native species (Grace, J. B. & J. S. Harrison. 1986. Can. J. Plant Sci., 66: 361–379). Both lygaeoids, however, should be considered nonindigenous in the Nearctic Region, based mainly on their recent detection and the absence of indigenous artheneids in the North American fauna (Wheeler & Fetter 1987, Hoffman & Slater 1995). In addition, neither lygaeoid shows a Beringian distribution that is typical of many naturally Holarctic heteropterans (Wheeler & Henry 1992).

Records.—*Chilacis typhae:* OREGON: WASHINGTON Co.: Tigard, 29 Sep 1997, A. G. Wheeler, *Typha latifolia,* old pistillate heads, 11 adults. WASHINGTON: COLUMBIA Co.: Rt. 30, 8 km W of Clatskanie, 20 May 1998, C. A. Stoops & A. G. Wheeler, *T. latifolia,* pistillate heads, 4 adults. GRAYS HARBOR Co.: McCleary, 20 May 1998, C. A. Stoops & A. G. Wheeler, *T. latifolia,* pistillate heads, 3 adults. KING Co.: Issaquah, 22 May 1998, C. A. Stoops & A. G. Wheeler, *T. latifolia,* pistillate heads, 2 adults. KITSAP Co.: Poulsbo, 28 Sep 1997, C. A. Stoops & A. G. Wheeler, *T. latifolia,* old pistillate heads, 9 adults. KITTITAS Co.: Ellensburg, 22 May 1998, C. A. Stoops & A. G. Wheeler, *T. latifolia,* pistillate heads, 1 adult. LEWIS Co.: E of Napavine, 29 Sep 1997, A. G. Wheeler, *T. latifolia,* old pistillate heads, 3 adults. MASON Co.: Shelton, 29 Sep 1997, A. G. Wheeler, *T. latifolia,* old pistillate head, 1 adult. PACIFIC Co.: Raymond, 20 May 1998, C. A. Stoops & A. G. Wheeler, *T. latifolia,* pistillate heads, 4 adults. SNOHOMISH Co.: Edmunds, 21 May 1998, C. A. Stoops & A. G. Wheeler, *T. latifolia,* pistillate heads, 4 adults. THURSTON Co.: Nisqually, 29 Sep 1997, A. G. Wheeler, *T. latifolia,* old pistillate heads, 5 adults.

Holcocranum saturejae: ARIZONA: COCHISE Co.: Gray Hawk Ranch, along San Pedro River, 13 km E of Sierra Vista, 5 Jun 1997, A. G. Wheeler, *T. angustifolia,* pistillate heads, 16 adults. PIMA Co.: Buenos Aires National Wildlife Refuge, Arivaca Cienega, E of Arivaca, 28 Jun 1997, A. Smith, *Typha* sp., pistillate heads, 5 adults. CALIFORNIA: COLUSA Co.: Rt. 20, 1.6 km W of Colusa,

9 Aug 1998, A. G. Wheeler, *Typha* sp., pistillate heads, 11 adults; Rt. 45, 1.3 km N of Yolo Co. line SW of Tisdale, 9 Aug 1998, A. G. Wheeler, *Typha* sp., pistillate heads, 6 adults. IMPERIAL Co.: Salton Sea National Wildlife Refuge, Hazard Unit, NW of Calipatria, 4–5 Dec 1997, K. Sturm & K. Haley, *T. latifolia,* pistillate heads, 4 adults. KERN Co.: nr Inyokern, 3 Nov 1997, C. A. Stoops, *Typha* sp., old pistillate head, 1 adult; Kern National Wildlife Refuge, Marsh Unit 1, 30 km W of Delano, 21 Nov 1997, J. Allen, *Typha* sp., pistillate heads, 3 adults. MONTEREY Co.: Monterey, 20 Mar 1998, C. A. Stoops, *Typha* sp., pistillate head, 1 adult. YOLO Co.: Rt. 16, NW of Rumsey, 10 Aug 1998, A. G. Wheeler, *Typha angustifolia,* pistillate heads, 5 adults. NEVADA: CLARK Co., Floyd Lamb State Park, Las Vegas, 13 Nov 1998, W. K. Reeves, *Typha* sp., pistillate heads, 6 adults. NEW MEXICO: SOCORRO Co.: Bosque del Apache National Wildlife Refuge, nr Socorro, 15 Sep 1997, M. Oldham, *T. latifolia,* pistillate heads, 8 adults. TEXAS: HIDALGO Co.: Santa Ana National Wildlife Refuge, S of Alamo, 18 Feb 1998, W. A. Jones & W. Warfield, *T. domingensis,* pistillate heads, 10 adults.

Acknowledgment.—The first collection of either Old World cattail bug in the West was at Gray Hawk Ranch in Arizona, and we thank naturalist Sandy Anderson for taking one of us (AGW) to a cattail stand on her property, Noel McFarland for his hospitality in Arizona, Walker Jones (USDA, ARS, Weslaco, Texas) for collecting *Holcocranum saturejae* in Texas, and Will Reeves (Clemson University) for collecting it in Nevada. We are indebted to personnel (and volunteers) of the National Wildlife Refuge System for making or facilitating collections of *H. saturejae:* Jack Allen (Kern), Sally Gall (Buenos Aires), Katie Haley (volunteer, Salton Sea), Alex Smith (volunteer, Buenos Aires), Mike Oldham (Bosque del Apache), and Ken Sturm (Salton Sea). We also appreciate attempts to find cattail bugs at other National Wildlife Refuges by David Blankinship at Lower Rio Grande Valley in Texas and Kim Forrest at Humboldt Bay in California. I. M. Kerzhner (Russian Academy of Sciences) called our attention to his recent paper, and P. H. Adler (Clemson University) provided useful comments on a draft of this manuscript.

A. G. Wheeler, Jr., *Dept. of Entomology, Clemson University, Clemson, South Carolina 29634-0365,* & Craig A. Stoops, *14990 Growler Ave., Apt. D, Naval Submarine Base Bangor, Silverdale, Washington 98315-9619.*

Received 20 Apr 1998; Accepted 11 Nov 1998.